

Aga Khan Academy, Hyderabad

SCHEME OF WORK

(Scope and Sequence)

GRADE – 11 Chemistry (HL)

**ACADEMIC YEAR: 2012-2013**

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| T**eacher:** | **Jaydip Chaudhuri** | **Subject:** | IB-Chemistry-Higher level |

| **Cycle and date** | **Topic &**  **Sub topics** | **Learning Outcomes** | **Teaching activities / Integration of ICT components** | **Assessment Summative / formative** | **Differentiated activities /SEN** | **Course work / practical component** | **Resources** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Cycle:1**  2nd -6th January | Bonding |  |  |  |  |  |  |
| **Cycle:2**  10th -17th January | Organic chemistry | Introduction to organic chemistry- hydrocarbon and its classification-homologous series-different kind of formula-emperical and molecular formula- Isomers-structural isomers- IUPAC nomenclature |  |  |  |  |  |
| **Cycle:3**  18th -25th January | Organic chemistry | IUPAC rules for naming the isomers of the non-cyclic alkanes upto C6.introduction with different functional group-primary secondary and tertiary carbon atoms in alcohols- Different kind of organic reaction alkane- its reaction- substitution- (free radical)combustion | Demonstration  Group discussion | Classroom observation  Work sheet  Quiz based on keyword used | Simplified worksheet for slow learner |  | IB data booklet  IB companion  Worksheet  web site |
| **Cycle:4**  27th Jan-3rd Feb | Organic chemistry | Alkene-reaction of alkene with hydrogen,halogen, hydrogen halide and water, polymerization of alkene-  Alcohols- complete combustion, oxidation reaction of alcohol-oxidation of alcohol- Halogenoalkane | Demonstration  Group discussion  Power point presentation based on the operation of mass spectrometer | Class room observation  Discussion  Work sheet  Quiz |  |  | IB data booklet  Worksheet  IB data booklet  Worksheet |
| **Cycle:5**  **6th Feb-13 th Feb** | Energetics | Student will be able to learn Exothermic and endothermic reaction- Standard enthalpy change of reaction relationship between temperature change, enthalpy change and the classification of a reaction as endothermic and exothermic- Enthalpy level diagram | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz | Simplified worksheet for slow learner | Finding chemical formula in the laboratory | IB data booklet  Worksheet |
| **Cycle:6**  14th Feb – 21st feb | Energetics | Calculation of enthalpy changes- calculate the heat energy change when the temperature of a pure substance is changed- calculation of enthalpy change for a reaction | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz |  |  | IB data booklet  Worksheet |
| **Cycle:7**  22nd Feb- 29 th Feb | Energetics | Hess’s law- Determine the enthalpy change of a reaction that is the sum of two or three reactions with known enthalpy changes | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz |  |  | IB data booklet  Worksheet  Different web site |
| **Cycle:8**  1st March- 9th March | Energetics | Introduction with the enthalpy cycle- enthalpy level diagrams- numerical problem based on enthalpy | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz |  |  | IB data booklet  Worksheet  web site |
| **Cycle:9**  12th March- 16th march | Kinetics | Rates of reaction- Student will be able to understand the term rate of reaction- explanation of suitable experimental procedure for measuring rates of reaction | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz |  |  | IB data booklet  Worksheet |
| **Cycle:10**  27th March- 3rd April | Kinetics | Collision theory-  Understanding the concept of  Kinetic theory in terms of the movement of particles- introduction with the concept of activation energy- with the energy profile diagram-  Collision theory | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz |  |  |  |
| **Cycle: 11**  4th April-12th april | Kinetics | Understanding the effect of temperature, concentration pressure and particle size on the rate of reaction-Maxwell- Boltzmann energy distribution curve for a fixed amount of gas at different temperature | Demonstration  Group discussion | Class room observation  Discussion  Work sheet  Quiz |  |  | IB data booklet  Worksheet  web site |
| Cycle:12  13th April-20th April | Kinetics | Numerical problem based on kinetics will be discussed |  |  |  |  |  |
| Cycle: 13  23rd April-30th April | Revision |  |  |  |  |  |  |
| Cycle:14  2nd May- 9th May | Revision |  |  |  |  |  |  |
| Cycle :15 |  |  |  |  |  |  |  |